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ABSTRACT

This document is a minicourse on the interaction of weather, environment, and culture. It is designed for the high school student to read and self-administer. Performance objectives, enabling activities, and postassessment questions are given for each of eight modules. The modules are: (1) Basic Facts About Your Weather Known As Rain, (2) The Weather Rules of the Game, (3) Using the Rules of the Game, (4) Why Deserts?, (5) Desert Dwellers, (6) Incan Heritage, (7) African Bushmen, and (8) The Great American Desert. Scripts of slide/tape presentations accompanying modules one through four are included in the document and satisfactorily convey the content, but modules five through eight do not have scripts. Copies of the master videotape for modules five through eight may be purchased from the Contemporary Learning Center High School, 1906 Cleburne, Houston, Texas 77004. (AV)

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WEATHER AND CULTURE[1]

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CONTEMPORARY LEARNING CENTER

WEATHER AND CULTURE

INTRODUCTION

Rain. Heat. Deserts. Ever wonder what causes the weather we experience daily? Well, in this mini-course you'll find part of the answer to this question.

Desert dwellers. Mountain dwellers. Ever wonder how people live in such environments? More important, did you ever think about how man uses culture to adapt to environment?

Geography. Anthropology. In this mini-course we'll put all these questions and answers together to discover how weather, environment and culture all interact.

There are eight modules in this course. First you should complete modules 1, 2, 3 and 4 in that order. You can do the others in any order you want.

1. "BASIC FACTS ABOUT YOUR BASIC WEATHER KNOWN AS RAIN"
2. "THE WEATHER RULES OF THE GAME"
3. "USING THE RULES OF THE GAME"
4. "WHY DESERTS?"
5. "DESERT DWELLERS"
6. "INCAN HERITAGE"
7. "AFRICAN BUSHMEN"
8. "THE GREAT AMERICAN DESERT"

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WEATHER AND CULTURE
1. "BASIC FACTS ABOUT YOUR BASIC WEATHER KNOWN AS RAIN"

PERFORMANCE OBJECTIVES

1. Given 3 short answer questions about rain facts, you will answer each correctly.
2. Given 5 fill-in-the-blank questions about rain facts, you will answer at least 4 of them correctly.

ENABLING ACTIVITIES

View the slide/tape presentation, "About Rain," or you can read the script for the presentation. If you want to view the slide/tape, it is available from your teacher. If you want to read the script, you'll find it on the page following the postassessment.

Then read "Temperature Changes Caused by Altitude Changes." This reading is found in this module after the script for "About Rain." If you want to practice figuring temperature changes caused by altitude changes, do the practice exercises at the bottom of this reading.

POSTASSESSMENT

Below are 2 sections of questions about rain-related facts. To meet the objectives of this module you must correctly answer all the questions in the first section, and at least 4 of the 5 questions in the second section. Write the answers on your own sheet of paper. Check with your teacher after you have written your answers. You will be able to re-write your answers until you have correctly completed all section 1 questions and 4 of the 5 section 2 questions.

Section 1: Answer each of the questions below.

1. What are the three kinds of rain?
2. What are the three "basic weather facts?"
3. Describe why any one of the three basic types of rain occurs.

Section 2: Fill in the blanks with the correct answers...

1. If you stood in a balloon basket and the temperature was 60°, and you went straight up 4000' to an altitude of

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8000', the temperature would then be about _____°.

2. If you stood in the basket of a balloon at an altitude of 2000' above the ground, and you went straight down and landed on the ground, the temperature would then be _____°. (Original temperature = 51°)
3. Cool air can hold _____ water than warm air.
4. Hot air will hold much _____ water than cold air.
5. Warm air _____.

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"BASIC FACTS ABOUT YOUR BASIC
WEATHER KNOWN AS RAIN"

"About Rain"

Weather. It affects each of us. But how many people know what causes the sunshine, rain, cold, or heat that we experience daily as our weather?** This activity will help enable you to understand what causes the rain part of our weather, whether this precipitation comes in the form of rain, snow, sleet, or hail.**

We'll study three different kinds of rain. But before we learn about the three kinds of rain, we'll need to** talk about some basic weather facts.

First, you need to know that** temperature goes down about 3 to 5° for every 1000' of altitude you go up. For example,** if you were standing at an altitude of sea level, and the temperature was 100°,** and the balloon you were in went straight up 1000', the temperature would then be about 95° or 97°.** So now you know the first basic weather fact: For each 1000' of altitude you go up, temperature will go down from 3-5°.

The second basic weather fact you need to know is that:** Warm air can contain more water than cool air.** Cooler air can hold less water than warm air, so when warm air rises and becomes cooler, the water in it comes out in the form of rain.** So now you know that** for each 1000' of altitude you go up, temperature will go down from 3-5°. You also now know that warm air can hold more water than cool air.**

So what does all this have to do with rain, you say. Let's find out by learning about the first kind of rain, mountain rain. Mountain rain occurs when** wind pushes against a mountain. The wind pushes the air** up along the side of the mountain. As the air rises** it cools. And as it cools the air can hold less and less water. When this happens** you get rain. Thus, mountain rain occurs** because wind blows against the side of a mountain, and the air rises and cools.

The second kind of rain we'll talk about is** heat rain. To understand heat rain** you have to understand one final basic weather fact. The fact you need to understand

is simple:** Hot air rises.** So how does that cause heat rain? Well, it occurs like this...** The hot air rises, because it's hot.** As it rises it gets cooler about 3-5° for every 1000' it rises. This cooler air can hold less moisture. This extra moisture has to go somewhere,** so it rains.** Now you know the causes of both mountain rain and heat rain.

Now you need to learn about** frontal rain.** (But first let's define what a front is.)** Well, a front is a body of air which moves as a mass.** How do fronts cause rain? Well, say a cold front moves into an area. Remember, before the cold front arrived in the area,** the air in the area was relatively warm. So when the cold front arrives,** it drives the warm air to a higher altitude. Why does it drive the warm air up higher?** Because warm air rises over cold air. So anyway,** the warm air rises. And as it rises, this air** cools about 3-5° for every 1000' it goes up. But as the air cools, it can hold less water. So,** the extra water has to go somewhere. It comes out of the air in the form of rain.**

So now you know why the three forms of rain occur. You know that the three types of rain are:**

1. Mountain rain;
2. Heat rain; and,
3. Frontal rain.**

You also know three basic weather facts. You know that:**

1. For each 1000' of altitude you go up, temperature will go down from 3-5°;
2. Warm air can hold more water than cold air; and,
3. Hot air rises.**

And we'll learn to use these things more later as we attempt to understand the weather we experience.

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"BASIC FACTS ABOUT YOUR BASIC WEATHER KNOWN AS RAIN"

"Temperature Changes Caused by Altitude Changes"

Follow these 5 steps to calculate how many degrees temperature will go down if your altitude changes:

STEP 1: Decide which altitude is greater, your original altitude or your new altitude.

STEP 2: Subtract the smaller altitude from the larger altitude.

STEP 3: Divide your answer by 1000.

STEP 4: Multiply that answer by either 3, 4, or 5 degrees.

STEP 5: A. If the new altitude is higher than the original altitude, SUBTRACT your step 4 answer from the temperature at the original altitude.

B. If the new altitude is lower than the original altitude, ADD your step 4 answer to the temperature at the original altitude.

"Some Practice Exercises"

1. Old altitude: 2000'
   New altitude: 6000'
   Old temperature: 10°
   New temperature: ??

2. Old altitude: 6000'
   New altitude: 2000'
   Old temperature: 20°
   New temperature: ??

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2. "THE WEATHER RULES OF THE GAME"

PERFORMANCE OBJECTIVE

1. You will name the 5 weather factors and the 5 weather rules with 100% accuracy.

ENABLING ACTIVITIES

View the slide/tape presentation, "Five Weather Rules," or you can read the script for the presentation. If you want to view the slide/tape, it is available from your teacher. If you want to read the script, you'll find it on the page following the postassessment.

POSTASSESSMENT

On your own sheet of paper, write the 5 weather factors and then the 5 weather rules. To meet the objective of this module you must do both things correctly. Check with your teacher after you have written your answers. You will be able to re-write your answers until you have correctly named both the weather factors and the weather rules.

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"THE WEATHER RULES OF THE GAME"

"Five Weather Rules"

Ever wonder what makes weather either hot or cold?** In this activity, that's exactly what we'll be studying. Specifically, we'll be discussing** factors that influence your weather. In this activity** we'll study how the weather factors influence the temperature part of weather.** We'll also study how the five factors influence rain.**

So what are these five weather factors? Well, the first one we'll study is** latitude. You may already know that latitude is a measure of** how close you are either to the north or the south pole.**

If you stood at the north pole, you would be at a "high" latitude. But if you stood at the south pole,** you would again be at a low latitude.**

What does this have to do with weather, you ask. Well,** generally, the higher the latitude of a place, the lower will be the place's temperature.** "Hey," you might say, "I already knew that it gets hotter as you get closer to the equator." But really, our first weather rule isn't totally true. In reality, the hottest places on earth are not along the equator.** The hottest places are on either side of the equator itself.**

To understand why the places along the equator aren't the hottest places on earth, you'd have to first understand the reason why** generally, the higher the latitude of a place, the lower will be the place's temperature. The reason for this has to do** with the sun. The sun's rays shine more directly on the areas near the equator, so these areas get more heat than other areas.**

The reason the places along the equator aren't the hottest places on earth has to do with** clouds. You see, there are patterns to the way clouds form and move over the earth. The reasons are complicated, but because of cloud cover, in fact the places along the equator are not always the hottest places on earth. Still, for our purposes** we'll just say that, generally, the higher the latitude of a place, the lower will be the place's temperature.

The second weather factor is** altitude. We've already studied how altitude affects temperature. Remember,** for each 1000' of altitude you go up, temperature will go down from

3-5°. So, in other words,** the higher the altitude of a place, the lower will be the place's temperature.**

The third weather factor is ocean currents. You see,** oceans, just like the land, have rivers flowing through them. These ocean rivers are called ocean currents.** We can map these ocean rivers just as we can map land rivers. But there is one important fact you need to know about these currents.** The currents have different temperatures. Thus some currents are warm water currents. Other currents are cold water currents.**

These currents do have a great influence on places near them. For example, two cities could be located at nearly the same latitudes. One city could easily be 20° hotter than the other city because of ocean currents. To express this kind of influence as a rule, we'll say that** places near warm ocean currents are made warmer; places near cold ocean currents are made colder.**

So far we've discussed three different weather factors.** And we've discussed three weather rules. All our first three weather rules dealt with temperature. We're going to discuss** two more weather factors and two more weather rules. But they will deal with rain, and not just temperature.**

The fourth weather factor is water.** How does water affect the rain part of our weather?** Well, rain is water, and the water in rain has to come from somewhere.** Much rain water comes from evaporation of the water in oceans and other large bodies of water. So** we'll say that places located near large bodies of water are generally wetter than places located far from large bodies of water.**

There is one last weather factor you need to know. The fifth weather factor is wind. **Wind <u>alone</u> may have little influence on weather.** But in combination with other factors, wind does have great influence on weather. How does wind combine with other factors to influence weather?

To answer this question,** let's first talk about how wind and ocean currents combine to affect temperature. To explain this,** let's say a wind was blowing over a warm ocean current. The warm water in the current will turn the wind warmer. Let's say that the now warm wind reaches land. The wind will warm the land up, right?**

Wind causes rain in a similar way.** Let's say wind blows on shore from over a large body of water. Water is usually evaporating from the ocean. The wind blows over the ocean and soaks up the evaporating water. The wind then carries the water over the land. Now the water may come out of the wind in the form of rain,** especially if** this wet wind** hits some mountains.**

But let's say that the wind blew off shore. In this case, water will be evaporating over the land, lakes, rivers, and so on. The wind would then carry the water it soaked up out over the ocean. This would make the land drier, because potential rain water is being taken away by the wind.** In some places, wind actually does blow on--shore in one season, making the season very rainy.** In the other season, the wind may blow in an off-shore direction, making this season dry.** To summarize these facts as a rule, we could say that** wind will carry water and heat either to, or away from land, depending on the direction in which the wind blows, and the temperature of the ocean currents the wind passes over.**

Now you know the five weather factors.** And you know the five weather rules. In the next activity,** you'll learn how to use these rules to predict weather patterns.

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3. "USING THE RULES OF THE GAME"

PERFORMANCE OBJECTIVE

1. Given 8 questions about predicting weather in various places, you will write the correct answers to at least 5 of them.

ENABLING ACTIVITIES

View the slide/tape presentation, "Using the Five Weather Rules," or you can read the script for the presentation. If you want to view the slide/tape, it is available from your teacher. If you want to read the script, you'll find it on the page following the postassessment.

POSTASSESSMENT

Below are 8 sets of questions about predicting weather in various places. To meet the objective of this module, you must correctly answer at least 5 of the questions. Write the answers to the questions on your own sheet of paper. Check with your teacher after you have written your answers. You will be able to re-write your answers until you have correctly answered at least 5 of the questions.

1. Which is colder: Eskimo Point, Canada, or Port Arthur, Texas? Explain why.
2. Which is colder: Leadville, Colorado, or St. Louis, Missouri? Explain why.
3. Which is colder: Wakkanai, Japan, or Portland, Oregon? Explain why.
4. Which has more rain, Pensacola, Florida, or North Platte, Nebraska? Explain why.
5. In the winter, is Calcutta, India rainy or dry? Explain why.
6. Which of the following two cities is colder? Explain why.

A.	B.
Hypo, Thetical	Ex, Ample
Latitude: 80°N (X 81°W)	80°S (X 81°W)
Altitude: 1000'	1000'
Ocean currents: None near	None nearby
Water: Near large body of water	Near large body of water
Wind: Very little	Very little

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WEATHER AND CULTURE
"USING THE RULES OF THE GAME"

7. Which of the following two cities has more rain? Explain why.

A. Whereville	B. Erewhay
Latitude: 30°N (X 15°W)	30°N (X 30°W)
Altitude: Sea level	Sea level
Ocean currents: None nearby	Cold current near
Water: Near ocean	None nearby
Wind: None or little	None or little

8. Which of the following two cities is hotter? Explain why.

A. Heretown	B. There
Latitude: 17°N (X 18°E)	17°S (X 18°E)
Altitude: 2000'	20000'
Ocean currents: None nearby	None nearby
Water: None nearby	Near ocean
Wind: None	None

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"USING THE RULES OF THE GAME"

"Using the Rules of the Game"

Ever look at a map and wonder what the weather is like at some place on that map? Or** did you ever look at a map of a place where you know what the weather is like, and wonder why the weather is the way it is? Well, in this activity, these are the questions we'll be trying to answer. Specifically, we'll be discussing** how to apply the weather rules you've learned in previous activities. We'll develop this skill by studying weather in different cities.

Let's start by trying to predict the weather for the cities Eskimo Point, Canada, and Port Arthur, Texas.** Eskimo Point is located at 61°N by 94°W; Port Arthur is located at 30°N by 94°W. Of these two cities, which would you predict as having the coldest temperature?** ** **If you guessed that Eskimo Point is colder than Port Arthur, you'd be right.** The reason, of course, has to do with the first weather factor, latitude, and** the first weather rule: "Generally, the higher the latitude of a place, the lower will be the place's temperature."**

Pretty good. You've applied the first weather rule. Now let's try to apply the second rule. Which is colder,** Leadville, Colorado,** or St. Louis, Missouri?** ** **If you said that Leadville would be colder than St. Louis, if all factors except altitude were equal, you'd be right. The reason is the second weather factor** altitude, and of course the second weather rule:** "The higher the altitude of a place, the lower will be the place's temperature."**

Good. Now let's try to apply the third weather rule. Which is colder,** Wakkanai, Japan,** or Portland, Oregon?** Well, you say, the latitudes and the altitudes of these two cities are about equal.** But a warm ocean current, the Japanese Current, does go near Japan. And the cold North Pacific Current does go near Oregon.** If you said that Wakkanai would be warmer than Portland, if all factors except ocean currents were equal, you'd be right. The reason is the third weather factor,** ocean currents, and the third weather rule:** "Places near warm ocean currents are made warmer; places near cold ocean currents are made colder."**

Fine. Now let's apply the fourth weather rule. Which city has more rain,** Pensacola, Florida,** or North Platte,

Nebraska?** **If you guessed that Pensacola has more rain than North Platte, you would be right.** The reason has to do with the fourth weather factor, water, and the fourth weather rule:** "Places located near large bodies of water are generally wetter than places located far from large bodies of water."**

OK. Let's apply the last weather rule. In the summer, is Calcutta, India, wet or dry?** Well, you might say, the wind in the summer does usually blow on-shore.** And obviously, the wind does blow over a big body of water, the Bay of Bengal. So you'd be right to say that Calcutta is wet in the summer. In fact,** in the months May to October, it rains between 40 and 60 inches.** But in the winter the wind blows in the opposite direction, off-shore. In the winter, when the wind blows off-shore,** it only rains between 2 and 10 inches.**

Well, that's about it. At this point you are probably pretty well able to guess the weather of different places, so long as you know the places' latitudes, altitudes, any nearby ocean currents, any nearby oceans or seas, and wind patterns. In other words, you know how to use the rules of the weather game.

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4. "WHY DESERTS?"

PERFORMANCE OBJECTIVE

1. Given 5 multiple choice questions about deserts, you will write the correct answers for at least 4 of them.

ENABLING ACTIVITIES

View the slide/tape presentation, "About Deserts," or you can read the script for the presentation. If you want to view the slide/tape, it is available from your teacher. If you want to read the script, you'll find it on the page following the postassessment.

POSTASSESSMENT

Below are 5 multiple choice questions about deserts. To meet the objective of this module, you must correctly answer at least 4 of the questions. Write the answers to the questions on your own sheet of paper. Check with your teacher after you have written your answers. You will be able to re-write your answers until you have correctly answered at least 4 of the questions.

1. A desert is:
   A. a place where it's usually hot.
   B. a place where it's usually dry.
   C. a place where it's usually cold.
   D. Both A. and B.
2. Las Vegas is located in a desert climate.
   A. True
   B. False
3. Mountains have very little to do with causing deserts.
   A. True
   B. False

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"WHY DESERTS?"

Questions 4 and 5 refer to the map below.

4. Place X is usually:
   A. cold.
   B. dry.
   C. wet.
   D. Can't tell without more facts.
5. Place Y is usually:
   A. cold.
   B. dry.
   C. wet.
   D. Can't tell without more facts.

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"WHY DESERTS?"

"About Deserts"

Deserts. Did you ever wonder what causes them? They really do exert a lot of influence on man** because, you see, much of the surface of the world is desert. Deserts cover large parts of Africa, Asia, and Australia. Deserts also exist in both North and South America.**

Before we explain how various weather factors cause deserts,** perhaps we ought to define what a desert is. You may think you already know what a desert is. You may think that** a desert is a place where it is usually hot and dry. But if you said that you'd be wrong.**

A desert is just a place where it is dry. But deserts can be either hot or cold. For example,** Las Vegas, Nevada has a desert climate. Yet the hottest month there is July, and the average temperature then is only 86°. The average temperature all year is only 65°.**

Many factors can cause deserts. But the main factor which we want to emphasize as causing deserts** is altitude. Specifically, that form of altitude known as mountains.** We'll examine how mountains cause deserts by looking at a specific case where mountains helped to form a desert. Let's talk further about our Las Vegas example.** Why is this area a desert area?**

Here's a map of the area we're talking about.** Let's say that there is a wind stream blowing toward Las Vegas from over the Pacific Ocean.** Let's also say that a second wind blows up toward Las Vegas from over the Gulf of Mexico.** If you said that these winds would be wet from picking up evaporated water over the ocean or gulf, you'd be right.**

Now let's add in the factor of mountains. Here's a map of the area which shows where some mountain ranges are located, including the Sierra Nevada Mountains and the Rockies.** If you said that these mountains would dry the wind streams out by making mountain rain, you'd be right.** Remember,** the winds would move toward the mountains,** be pushed up, thus cooling the winds because the altitude increases,** and now the winds couldn't hold as much water.** The extra water would fall in the form of mountain rain.**

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"WHY DESERTS?"

Las Vegas is a desert area because,** even when winds carrying wet air moves toward Las Vegas,** that air is dried out before it reaches the city.** And an area without moisture is a desert.**

At this point you should have a fairly good understanding of why deserts exist.** At any rate, you should at least be ready to admit that** mountains often have something to do with causing deserts.

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5. "DESERT DWELLERS"

PERFORMANCE OBJECTIVE

1. Given 7 sets of questions about some desert dwellers, you will write the correct answers for at least 6 sets.

ENABLING ACTIVITIES

View the videotape, "Desert Dwellers." The tape and the necessary equipment can be obtained from your teacher.

POSTASSESSMENT

Below are 7 sets of questions about the story, "Desert Dwellers." To meet the objective of this module you must correctly answer all the questions in at least 6 of the sets. Write the answers in your own words on your own sheet of paper. Check with your teacher after you have written your answers. You will be able to re-write your answers until you have correctly answered 6 sets of questions.

1. What are the possessions of the men of this culture? What are the possessions of the women of this culture?
2. Since physical possessions and tools are not the aborigines' main keys to survival, what is?
3. The aborigines practice work specialization on the basis of sex. What jobs do the women do? What jobs do the men do?
4. Describe how hunting skills are taught in the aborigine culture. What special beliefs do the people have about their boomerangs?
5. Why must the aborigines know their land well in order to survive?
6. Describe in detail the system by which the aborigines are bound to a specific area of land.
7. What is the aborigine greeting? Who must each aborigine marry?

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6. "INCAN HERITAGE"

PERFORMANCE OBJECTIVE

1. Given 9 sets of questions about an area in South America, you will write the correct answers for at least 7 sets.

ENABLING ACTIVITIES

View the videotape, "Incan Heritage." The tape and necessary equipment can be obtained from your teacher.

POSTASSESSMENT

Below are 9 sets of questions about the story, "Incan Heritage." To meet the objective of this module you must correctly answer all the questions in at least 7 of the sets. Write the answers in your own words on your own sheet of paper. Check with your teacher after you have written your answers. You will be able to re-write your answers until you have correctly answered 7 sets of questions.

1. Do historians believe that the American Indians Columbus and other early explorers met were inherently primitive? What is the historians' theory about the levels of Indian cultures?
2. How large did the Incan empire get to be? What kinds of work specialization did the people employ to support their large empire?
3. Name at least 3 Incan customs about marriage among people who weren't nobles.
4. Describe how the Incan communication system worked. How far could messages travel each day with this system?
5. When is the last time it rained in the area the videotape deals with?
6. How did the people living in this place manage to get water?
7. Who fought in the War of the Pacific? Describe in detail why the countries fought this war.
8. Why did the area become less important after World War I?
9. Why did people choose to live in this area during Incan times? Why did they live there in the era before World War I?

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7. "AFRICAN BUSHMEN"

PERFORMANCE OBJECTIVE

1. Given 7 sets of questions about an African culture, you will write the correct answers for at least 6 sets.

ENABLING ACTIVITIES

View the videotape, "African Bushmen." The tape and necessary equipment can be obtained from your teacher. You may wish to refer to the map which follows the post-assessment as you view the tape or as you complete the postassessment.

POSTASSESSMENT

Below are 7 sets of questions about the story, "African Bushmen." To meet the objective of this module you must correctly answer all the questions in at least 6 of the sets. Write the answers in your own words on your own sheet of paper. Check with your teacher after you have written your answers. You will be able to re-write your answers until you have correctly answered 6 sets of questions.

1. What are the average summer and winter daily temperatures in the desert? How do these temperatures compare to Houston's temperatures?
2. What is the average annual rainfall in the desert? What is the average annual rainfall in Houston?
3. How many Bushmen live in the area? Are there more males or females? Does an absence of young people exist to suggest that the culture is dying out? Does an absence of older people exist to suggest that, even with the culture's adaptation to the environment, people have a rough time surviving in this area?
4. What is more critical to the Bushmen's survival, food or water? Why?
5. What kind of diet do the Bushmen eat? Be specific regarding percentages of different foods they eat.
6. Describe at least two of the Bushmen's customs regarding food collection.

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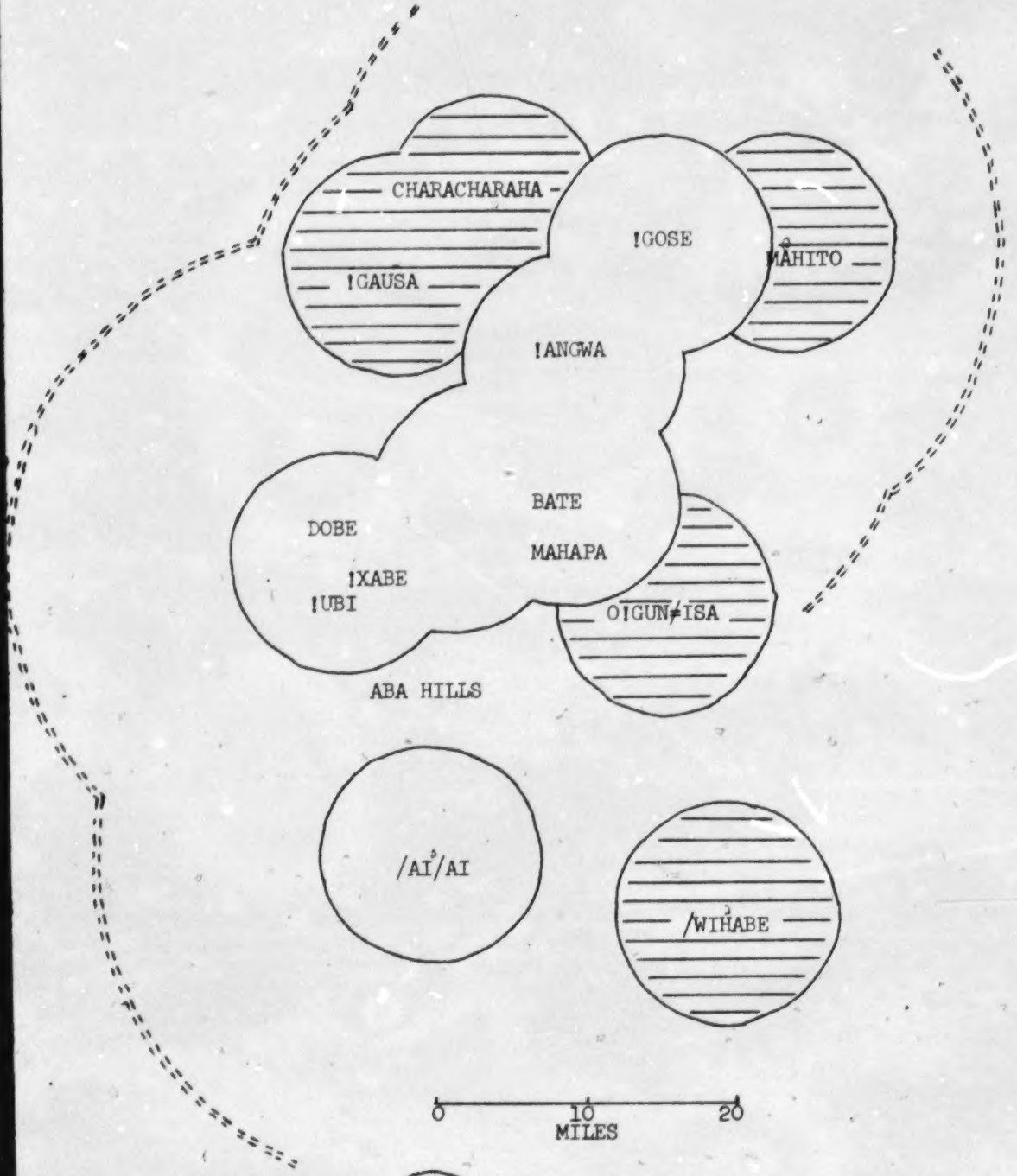
"AFRICAN BUSHMEN"



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8. "THE GREAT AMERICAN DESERT"

PERFORMANCE OBJECTIVE

1. Given 8 sets of questions about the "American Desert," you will write the correct answers for at least 7 sets.

ENABLING ACTIVITIES

View the videotape short-titled "American Desert." The tape and necessary equipment can be obtained from your teacher.

POSTASSESSMENT

Below are 8 sets of questions about the story, "American Desert." To meet the objective of this module you must correctly answer all the questions in at least 7 of the sets. Write the answers in your own words on your own sheet of paper. Check with your teacher after you have written your answers. You will be able to re-write your answers until you have correctly answered at least 7 sets of questions.

1. Which country is the world's major exporter of wheat? Which country is the world's major exporter of corn?
2. Name at least one event which might have led to the middle of the United States having been called the "Great American Desert."
3. Five problems are named which had to be solved before the "Great American Desert" could become the "Breadbasket of the World." What are the first four of these problems? Pick any two of these first four problems, and explain how climate or geography contributed to the problems.
4. Name at least three inventions or technological advances which helped to solve the problems. Which problems did each of the inventions you named help to solve?
5. Which was worse: the mid-America drought of the 30's or the mid-America drought of the early 50's? Which drought most affected the farmers?
6. Name at least two rules the farmers use to help predict summer rainfall.
7. Describe how the farmers use the chart which shows crop yields given different amounts of moisture.
8. Name at least two different ways the American culture responded to the mid-American environment to make the area productive.

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